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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,703	DEAN ET AL.	
	Examiner	Art Unit	
	KimbleAnn Verdi	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-21 and 23-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-21 and 23-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application.
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 19-21 and 23-44 are pending in the current application.

Specification

2. The use of the trademark JAVA™ has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

3. Claim 19-21, 23-33, and 44 are objected to because of the following informalities:

a. Claim 19, line 17, the recitation of "the memory", should be --memory--;

b. Claim 44, line 3, the recitation of "Java", should b --JAVA™--.

c. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 19-21 and 23-33** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. Claim 19, lines 7-8, the recitation of "a representation of one or more output devices" is not disclosed in the specification. Thorough review of the specification by the Examiner did not result in finding of the subject matter properly disclosed in the specification. Applicant describes devices coupled to the computer can be data sinks on page 6, lines 9-11; however Applicant does not describe a representation of one or devices. Examiner suggests amending claim 19, lines 7-8 as follows: --a plurality of data sink objects including one or more application software tools or one or more output devices--.

7. Claim 19, lines 11-12, the recitation of "one or more storages" is not disclosed in the specification. Thorough review of the specification by the Examiner did not result in finding of the subject matter properly disclosed in the specification. Applicant describes memory of a computer system on page 7, lines 32-34 and page 8, line 1; however Applicant does not describe one or more storages. Examiner suggests amending claim 19, lines 11-12 as follows: --one or more memory storages for storing the data object--.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 19-21, 27-29, 31, 33-34, 36, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer, previously cited) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams, previously cited) (U.S. Patent 5,911,066), and further in view of Ashe et al. (hereinafter Ashe, previously cited) (U.S. Patent 6,593,947 B1).

10. **As to claim 19**, Breyer teaches the invention substantially as claimed including a data transfer system for transferring data from a data source (***i.e. video source 112, Figure 2***) to multiple data sink objects (***i.e. Vision Object, IMAQ Object, and Viewer Object, Figure 3***), the system comprising:

a data source holding (***i.e. supplies video to video capture device***) acquired data (***i.e. video source 112, Figure 2, col. 4, lines 28-29***);

an interface for communicating with the data source to receive the data from the data source (***IMAQ Control Object, Fig. 5, col. 2, lines 35-36***);

a plurality of data sink objects (***i.e. Vision Object, IMAQ Object, and Viewer Object, Figure 3***) including one or more application software tools (***i.e. the objects may comprise any of various types of software objects, components or reusable software elements - software objects or components could be application***

software tools represented by the Vision Object, IMAQ Object and Viewer Object, col. 4, lines 39-51);

a data processor for encapsulating the data into a data object in memory (***CPU 202, Fig. 2***); and

one or more memory storages for storing the data object (***i.e. system memory 206, Figure 2***).

11. Breyer does not explicitly disclose registering one or more of the plurality of data sink objects with the data server object; transferring to the one or more registered data sink objects identification information identifying the data object, the data server providing a pointer indicating a location of the data object in memory to identify the data object; the one or more registered data sink objects access the data object using the identification information and sharing the data object among the one or more registered data sink objects to prevent extraneous copies of the received data.

12. However, Williams teaches a data server (***Data Source 1102, Fig. 11***) for transferring to the one or more registered data sink objects identification information identifying the data object (***step 1202, Fig. 12, col. 15, lines 25-27***), the data server providing a pointer indicating the location of the data object in memory to identify the data object (***step 1204, Fig. 12, col. 15, lines 25-29***); and the one or more registered data sink objects access the data object using the identification information (***step 1204-1208, Fig. 12, col. 15, lines 27-45 and col. 17, lines 34-36***).

13. Breyer modified by Williams does not explicitly disclose sharing the data object among the one or more registered data sink objects to prevent extraneous copies of the received data.

14. However Ashe teaches sharing the data object among the one or more registered data sink objects (***i.e. elements***) to prevent extraneous copies of the received data (***col. 2 lines 40-44 and col. 5, lines 62-64***).

15. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the dynamic binding mechanism of Breyer with the teachings of data transfer mechanisms from Williams and Ashe because these features would have provided an interface to computer programs so that the computer programs may transfer data in a uniform manner after a connection is established (***col. 5, lines 54-58 of Williams***) and provided a mechanism with the ability to define references to imaging object reference data that allows sharing of images among elements (***col. 5, lines 62-64 of Ashe***).

16. **As to claim 20**, Breyer does not explicitly disclose wherein the data server object includes a list listing the one or more registered data sink objects that are registered with the data server.

17. However Williams teaches wherein the data server object includes a list listing

the one or more registered data sink objects that are registered with the data server (***col. 16, lines 8-22***).

18. The motivation for modifying Breyer with the teachings of Williams and Ashe is the same as provided in the rejection of claim 19 above.

19. **As to claim 21**, Breyer teaches wherein the computer system provides a technical computing environment (***video capture system, col. 2, lines 23-33***).

20. **As to claim 27**, Breyer teaches wherein the data source provides data sequence continuously for a period of time (***sequence of image data, col. 4, line 37***).

21. **As to claim 28**, Breyer teaches wherein the data source provides a package of data, the package of data being used independently of other packages of data (***compressed data, col. 4, line 37***).

22. **As to claim 29**, Breyer teaches wherein the package of data includes a frame of image data (***video frame, col. 4, lines 31-37***).

23. **As to claim 31**, Breyer teaches wherein the data processor configures a maximum amount of memory that all data objects use at a given instance of time (***col. 6, lines 64-67, col. 7, lines 1-2***).

24. **As to claim 33**, Breyer teaches wherein the interface, the data processor, and the data server are implemented independently of MATLAB (***image application, col. 6, lines 51-54***).

25. **As to claim 34**, this claim is rejected for the same reasons as claim 19 since claim 34 recites the same or equivalent invention, see the rejection to claim 19 above.

26. **As to claim 36**, this claim is rejected for the same reasons as claim 21 since claim 36 recites the same or equivalent invention, see the rejection to claim 21 above.

27. **As to claim 42**, Breyer teaches wherein the instructions are run independently of MATLAB (***image application, col. 6, lines 51-59***).

28. **As to claim 43**, Breyer teaches wherein the instructions are originated from code written with C programming language (***col. 11, line 41***).

29. **As to claim 44**, Breyer does not explicitly disclose wherein the instructions are originated from code written with an object-oriented programming language such as C++, C# and JAVA™.

30. However Williams teaches wherein the instructions are originated from code written with an object-oriented programming language such as C++, C# and JAVA™

(***col. 6, lines 26-27***).

31. The motivation for modifying Breyer with the teachings of Williams and Ashe is the same as provided in the rejection of claim 19 above.

32. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Ashe et al. (hereinafter Ashe) (U.S. Patent 6,593,947 B1), as applied to claim 19 above, and further in view of Thomas et al. (hereinafter Thomas, previously cited) (U.S. Patent 7,523,191).

33. **As to claim 23**, Breyer as modified by Williams and further modified by Ashe does not explicitly disclose at least one or more data listener object that is registered to a respective one of the one or more registered data sink objects.

34. However, Thomas teaches one or more data listener object (***i.e. client as listener***) that is registered to the one or more registered data sink object (***i.e. sink of server, col. 39, lines 38-42, 55-60 and col. 31, lines 15-41 and 55-60***).

35. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have further modified the system of Breyer as modified by

Williams and as further modified by Ashe with the teachings of a client service from Thomas because this feature would have further provided a mechanism for listening on the outgoing notification interface of the applicable server module which may be realized similar to a JAVA™ listener (***col. 39, lines 56-60 of Thomas***).

36. **As to claim 24**, Breyer as modified by Williams and further modified by Ashe does not explicitly disclose wherein the respective one of the one or more registered data sink objects deletes each of the at least one data listener objects registered with the one or more registered data sink objects when the respective one of the one or more registered data sink objects is deleted.

37. However Thomas teaches wherein the respective one of the one or more registered data sink objects deletes each of the at least one data listener objects (***i.e. resign as listener***) registered with the one or more registered data sink objects when the respective one of the one or more registered data sink objects is deleted (***i.e. release interface pointer, col. 32, lines 1-13, 64-66 and col. 40, lines 43-51***).

38. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Thomas is the same as provided in the rejection of claim 23 above.

39. **As to claim 25**, Breyer as modified by Williams and further modified by Ashe does not explicitly disclose wherein the respective one of the one or more registered

data sink objects notifies each of the at least one data listener object registered with the respective one of the one or more registered data sink when the respective one of the multiple data sink objects is deleted.

40. However Thomas teaches wherein the respective one of the one or more registered data sink objects notifies each of the at least one data listener object registered with the respective one of the one or more registered data sink objects (***i.e. server notifies client of shutdown of Thomas***) when the respective one of the multiple data sink objects is deleted (***i.e. release interface pointer, col. 32, lines 64-67 and col. 40, lines 44-47 of Thomas***).

41. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Thomas is the same as provided in the rejection of claim 23 above.

42. **As to claim 26**, Breyer as modified by Williams and further modified by Ashe does not explicitly disclose wherein the respective one of the one or more registered data sink objects notifies each of the at least one data listener object when the respective one of the one or more registered data sink objects is updated with a new data object.

43. However Thomas teaches wherein the respective one of the one or more registered data sink objects notifies each of the at least one data listener object (***i.e.***

client service) when the respective one of the one or more registered data sink objects is updated with a new data object (***i.e. profile updated, col. 32, lines 30-38 and col. 40, lines 1-10***).

44. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Thomas is the same as provided in the rejection of claim 23 above.

45. Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Ashe et al. (hereinafter Ashe) (U.S. Patent 6,593,947 B1), as applied to claims 19 and 28 above, and further in view of Rhoades et al. (hereinafter Rhoades, previously cited) (U.S. Publication No. 2003/0041163 A1).

46. **As to claim 30**, Breyer as modified by Williams and further modified by Ashe does not explicitly disclose wherein the package of data includes a scan of radar, sensor, or audio data, as well as network data packets.

47. However, Rhoades teaches wherein the package of data includes a scan of radar, sensor, or audio data, as well as network data packets (***paragraph 0127***).

48. It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have further modified the image data of Breyer as modified by Williams and as further modified by Ashe with the teachings of a data packet from Rhoades because this feature would have further provided a new processor architecture that is suitable, specifically but not exclusively, for Data Flow processing problems (***paragraph 0010 of Rhoades***).

49. **As to claim 32**, Breyer as modified by Williams, and further modified by Ashe does not explicitly disclose a processor for controlling the interface, the data processor, and the data server, wherein the processor is 64 bits or more.

50. However Rhoades teaches a processor for controlling the interface, the data processor, and the data server, wherein the processor is 64 bits or more (***ALU of processor, paragraph 0088***).

51. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Rhoades is the same as provided in the rejection of claim 30 above.

52. Claims 35, 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Ashe et al. (hereinafter Ashe) (U.S. Patent 6,593,947 B1), as applied to claim 34 above, and further in view of Hewett (previously cited, U.S. Patent 6,823,524 B1).

53. **As to claim 35**, Breyer as modified by Williams and as further modified by Ashe does not explicitly disclose a data sink listener object that is registered with one or more of the registered data sink objects.

54. However, Hewett teaches a data sink listener object that is registered with one or more of the registered data sink objects (***event generator object (A) 30, Fig. 5, event listener object (B) 32, Fig. 5, col. 4, lines 27-30, and step 64, Fig. 6, col. 4, lines 61-64***).

55. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have further modified the image object of Breyer as modified by Williams and as further modified by Ashe with the teachings of an event object from Hewett because this feature would have further provided a mechanism for a object-oriented data processing system which uses events to pass control from an event generator object to a listener object (***col. 1, lines 21-25 of Hewett***).

56. **As to claim 37**, Breyer as modified by Williams and as further modified by Ashe does not explicitly disclose wherein the data sink listener object performs a task relating to a function of a respective one of the registered data sink objects.

57. However Hewett teaches wherein the data sink listener object performs a task relating to a function of a respective one of the registered data sink objects (***object B***

can receive and execute event E1, col. 4, lines 3-9).

58. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Hewett is the same as provided in the rejection of claim 35 above.

59. **As to claim 38**, Breyer as modified by Williams and as further modified by Ashe does not explicitly disclose wherein the data sink listener object performs a task relating to a function of a respective one of the registered data sink objects on a thread of the data server object.

60. However Hewett teaches wherein the data sink listener object performs a task relating to a function of a respective one of the registered data sink objects on a thread of the data server object (***run on common thread, col. 4, lines 24-25***).

61. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Hewett is the same as provided in the rejection of claim 35 above.

62. **As to claim 39**, Breyer as modified by Williams and as further modified by Ashe does not explicitly disclose wherein the data sink listener object performs a task relating to a function of a respective one of the registered data sink objects on a thread different from that of the data server object.

63. However Hewett teaches wherein the data sink listener object performs a task relating to a function of a respective one of the registered data sink objects on a thread different from that of the data server object (***NLS objects run on separate threads 46, 50, Fig. 5, col. 4, lines 40-45 and step 86, Fig. 7***).

64. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Hewett is the same as provided in the rejection of claim 35 above.

65. **As to claim 40**, Breyer as modified by Williams and as further modified by Ashe does not explicitly disclose wherein at least one of the registered data sink objects perform a function on a thread of the data server object.

66. However Hewett teaches wherein at least one of the registered data sink objects perform a function on a thread of the data server object (***step 82, Fig. 7***).

67. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Hewett is the same as provided in the rejection of claim 35 above.

68. **As to claim 41**, Breyer as modified by Williams and as further modified by Ashe does not explicitly disclose wherein at least one of the registered data sink objects perform a function on a thread different from that of the data server object.

69. However Hewett teaches wherein at least one of the registered data sink objects perform a function on a thread different from that of the data server object (***event generator object passes event objects in separate threads, col. 4, lines 50-53***).

70. The motivation for modifying Breyer with the teachings of Williams, Ashe, and Hewett is the same as provided in the rejection of claim 35 above.

Response to Arguments

71. Applicant's arguments filed on October 2, 2009 have been fully considered but they are not persuasive. In response to the Non-Final Office Action dated July 2, 2009 applicant argues in regards to claims 19-21, and 23-44:

> (1) **Ashe does not disclose or suggest that sharing the data object among the one or more registered data sink objects' to prevent extraneous copies of the received data where the data sink objects include one or more application software tools or a representation of one or more output devices, as provided in Applicants' amended claim 19** (page 7, lines 25-31).

In response to argument (1), examiner respectfully disagrees and notes that Ashe discloses where the one or more of the registered data sink objects include one or more application software tools. Ashe teaches sharing the data object among the one or more registered data sink objects, which are represented by elements (***col. 2 lines***

40-44), to prevent extraneous copies of the received data (***col. 5, lines 62-64***). The elements are implemented by system services, which represent one or more of the registered data sink objects implemented as an application software tool since system services on a MacOS operating system are implemented by the MacOS Toolbox, which is an application software tool (***col. 1, lines 16-28***).

(2) **In addition, the cited references, alone or in any reasonable combination, further fail to disclose or suggest registering one or more of the plurality of data sink objects' with the data server object, as recited in Applicants' claim 19**. Regarding the registering feature, the Examiner cites Williams. See Office Action, page 5, § 12. However, the cited section of Williams discusses the data sink registering with a window manager to indicate that the data sink is available for a drop in a drag-and-drop operation. See Col. 16, lines 8-10. However, nowhere does Williams disclose or suggest that the data sink includes an application software tool or an output device. Moreover, in Williams, the data sink registers with the window manager as opposed to a data server object, as provided in Applicants' claim 19 (page 7, lines 33-34 and page 8, lines 1-7).

In response to argument (2), examiner respectfully disagrees and notes that Williams discloses the data sink includes an application software tool or an output device and the data sink registers with a data server object. Williams teaches the data

sink is a computer program which accepts data, which represents an application software tool (col. 1, lines 26-28).

In addition Williams teaches the data sink registers with the window manager (***col. 16, lines 8-10***), which represents the data sink registers with the data server object since the window manager performs the same functions as the data server object like passing a pointer to the IDataObject interface to the data sink, the data sink uses the pointer to access the object (***col. 15, lines 60-67***).

Conclusion

72. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

73. U.S. Publication No. 2002/0078060 to Garst et al. discloses keeping track of whether a memory space allocated to a new object or a new program or data structure can be reclaimed.

74. U.S. Publication No. 2003/0208537 A1 to Lane et al. discloses data sinks register with a server to receive notifications and data.

75. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

76. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

77. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KimbleAnn Verdi whose telephone number is (571)270-1654. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST.

78. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

79. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hyung S. Sough/
Supervisory Patent Examiner, Art Unit 2194
01/02/10

December 31, 2009

KV